



STANHOPE
STATION
HOMESTEAD

IRRIGATION

IN

VICTORIA

AUSTRALIA.



JUNCTION OF BRANCH
and MAIN CHANNELS.

CHANNEL RUNNING
through SETTLERS
HOLDING.

PANAMA-PACIFIC INTERNATIONAL
EXPOSITION • SAN FRANCISCO.

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A Homestead on the "Stanhope" Estate.



1. The Homestead.
2. The West Front.

3. The Stable Drive.
4. View from Verandah.

IRRIGATION IN VICTORIA

INFORMATION *for* **HOME SEEKERS**

Ready-Made Farms in the
Irrigated Districts of the
State of Victoria, Australia

The Stanhope and Werribee Estates

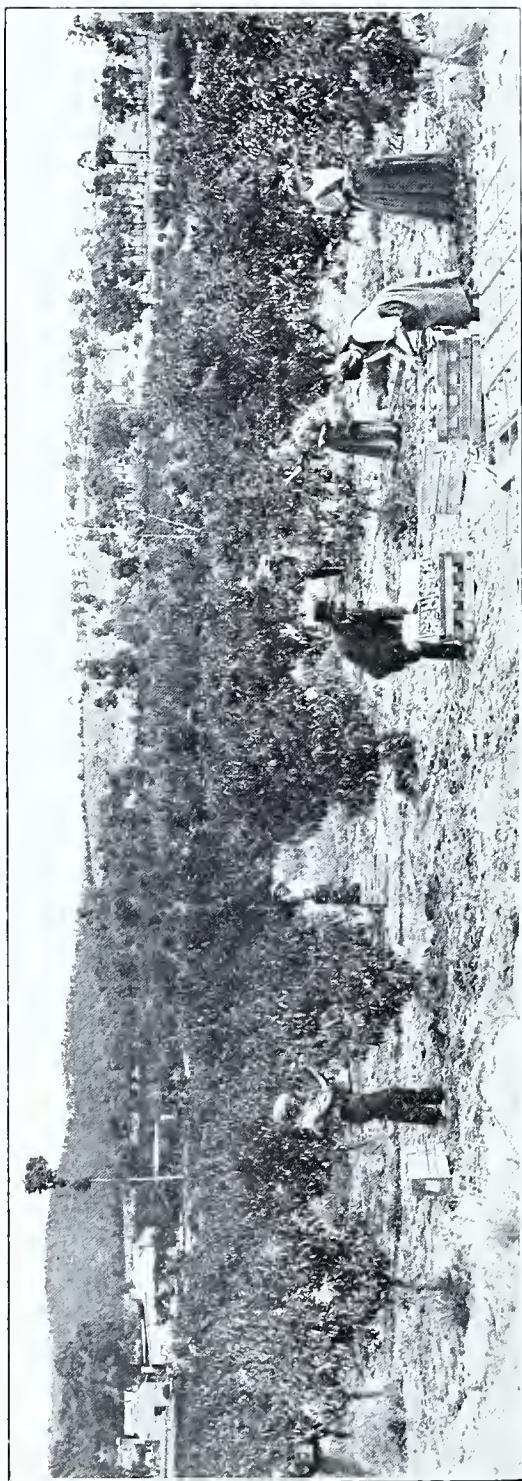
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For further information call on:—

*Mr. F. T. A. Fricke, Victorian Trade & Immigration Commissioner,
687 Market-street, San Francisco, Cal., U.S.A.*

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An Irrigated Peach Orchard.



An Irrigated Dairy Farm.

Irrigation in Victoria (Australia)

READY-MADE FARMS IN THE IRRIGATION DISTRICTS OF VICTORIA, AUSTRALIA.

Visitors to the Panama Exposition, who are considering changing their present home to some developing district elsewhere, are invited to consider the unique and exceptional opportunities presented by the ready-made farms now offered to settlers by the State of Victoria (Australia) in the State irrigation districts.

This State is about 7,000 miles from the Exposition, and as the conditions of life and the natural resources of the Australian Continent are not everywhere understood, a description of these farms will be preceded by a brief explanation of the political, social, and industrial conditions of the State where they are located. It is as interesting and important to know the kind of people one is to live among, and the kind of Government one is to live under, as to know what the soil will produce and the prices which will be paid for its products.

Victoria is one of the six States of the Australian Commonwealth, and occupies the south-east corner of the Australian Continent. The climate resembles that of northern California, being equally removed from the extremes of heat and cold. The highest recorded temperature in Melbourne, the capital city, is 111° , the lowest 27° , while the average is 58.3° . Along the coast there is a heavy rainfall similar to that of the coast counties of California, while in the northern half of the State the rainfall is lower and the temperature higher, resembling more nearly the climate of the interior



Fattening Sheep on Alfalfa, Victoria.

valleys of California. The production of the irrigated farms and orchards are, therefore, practically a duplicate of those of the Santa Clara and San Joaquin Valleys in the home State of the Exposition.

While the Australian Commonwealth is a part of the British Empire, it has its own Parliament, and each of the several States has its own Parliament, like the Federal Congress and State Legislatures in America. The members of these Parliaments are elected by the votes of both men and women. Primary education is free, secular, and compulsory. Attendance at the State (public) schools is required between the ages of six and fourteen, and ample provision for higher education is made in a number of colleges and Melbourne University. The State supports two agricultural colleges and a number of agricultural high schools, and the State Government takes an active interest in the promotion of agriculture. To this end it carries on extensive farms for demonstration and research, exercises a supervision over dairying, holds farmers' institutes, and employs a body of experts to give advice in fruit-growing, stock raising, and the growing of farm crops. It has built a large cold-storage warehouse in Melbourne for the handling of perishable products, loans money to orchardists in fruit-growing sections to build local cold-storage warehouses, gives financial aid to co-operative meat-packing establishments in country districts, and to marketing surplus agricultural products abroad. The railways, telegraphs, telephones, and the parcels post are all owned and operated by the Government, and all of the important irrigation works are State owned.



Irrigating a Vineyard.

State Works for Irrigation and Water Supply.

A map showing the water resources of Victoria may be seen in the Australian building of the Exposition. It gives the location of the principal irrigation areas and the watersheds and streams which provide the water supply. A study of this map will give a good understanding of the extensive development that has already taken place, and the much larger possibilities of the future.

At the close of the last fiscal year (30th June, 1914) the State had expended \$39,057,485 on works for irrigation and rural water supplies. Last year 13,267,000 acres were supplied from these works with water for domestic and stock purposes, and 317,000 acres were irrigated. The State has appropriated \$2,950,000 for making extensions to these works during the year 1914-15.

The main water supply comes from the dividing mountain range, which runs east and west across the State. The streams south of the range have not as yet been much used for irrigation, because of the heavier rainfall along the coast; but on the northern or interior side of the range, where the rainfall is lighter and the summer temperature higher, irrigation is required by orchards and vineyards and in the growth of summer fodder crops. It is in this section that the chief development has thus far taken place. The principal irrigated areas being in the valleys of the two largest rivers, the Murray and the Goulburn.

The only State irrigation districts on the sea-coast side of the mountains are at Bacchus Marsh and at Werribee, both of which are on the Werribee River. The Werribee Estate, hereafter described, is on the east side of this river, about 17 miles from Melbourne.



The Outlet of Waranga Basin.—Goulburn-Waranga System, Victoria.

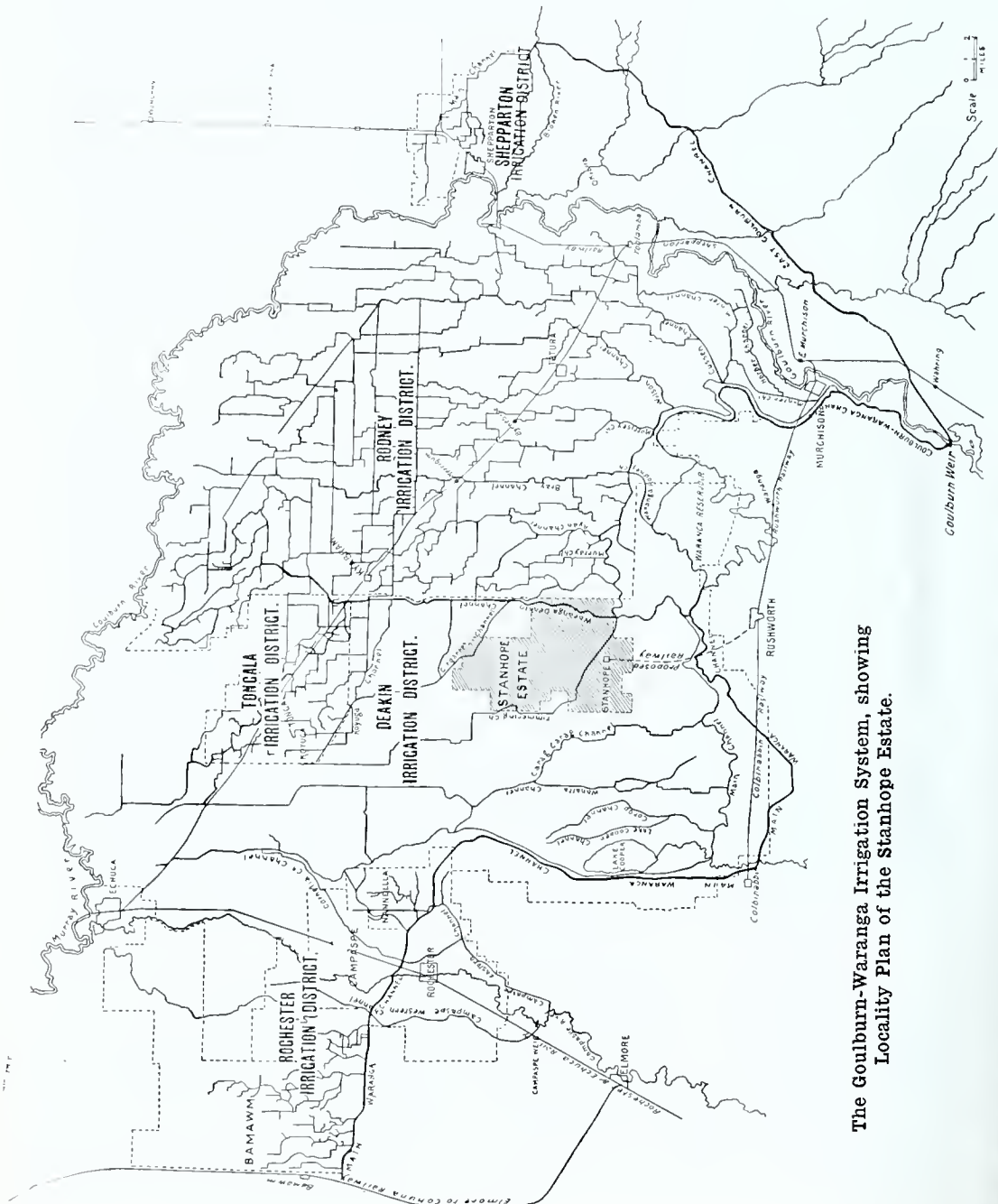
The Development of Irrigated Closer Settlement.

Irrigation in Victoria dates back over 30 years; but at first, owing to there not being enough people on the land to improve and cultivate it, irrigated agriculture made slow progress. A change came when the State began to purchase and subdivide large irrigable estates, and sell them on such favorable conditions as to attract settlers from all parts of the world. In all, eleven closer settlements have been established, and of these practically

all of the land in the Merbein, Nyah, Dingee, Rochester, and Shepparton closer settlements has been sold to actual settlers, in tracts varying in size from 2 acres to 200 acres, with an average of about 40 acres. The Merbein and Nyah settlements were established on public land. Elsewhere the State bought the land at its unirrigated value, and is selling it at practically cost price on more favorable terms than any private individual or company could give.

The following pages will describe two estates which have recently been subdivided and supplied with water by a very complete system of distributary channels, and are now ready for inspection and settlement.

THE STANHOPE ESTATE.



The Goulburn-Waranga Irrigation System, showing
Locality Plan of the Stanhope Estate.

The larger of these is the Stanhope Estate, which has an area of about 23,000 acres. It was formerly one of the noted sheep stations (ranches) of Victoria, and until about eight years ago was used as a pastoral property, none of the land being cultivated. All except about 3,000 acres was originally wooded, but many years ago the trees were ring-barked, killed, and left standing, as the dead standing timber did not interfere with the use of the land for grazing. In recent years the dead trees on part of the estate have been pulled down and converted into fence posts and firewood. Where still standing the timber has sufficient value for fence posts, firewood, and frames for farm buildings to more than pay for its removal. In any event the settler can have his choice of farms wholly cleared or only partly cleared of timber.



Irrigated Alfalfa Field, Victoria.

Special Advantages of this Estate.

There are certain governing considerations which promise to make this estate take as high a position among irrigation areas as it formerly did among pastoral properties. One of these is its location. It is situated immediately below the Waranga Basin, at present the main reservoir of the Goulburn scheme, and is able to be served either by diversion direct from the river, or from this stored water supply. It is near the main railway line, connecting the two large cities of Australia, Melbourne and Sydney, and has therefore direct connexion with both metropolitan markets. The distance to Melbourne by rail is about 120 miles, and to Sydney about 400 miles. Melbourne has a population of about 600,000, and Sydney about 800,000.

It is in the heart of the largest irrigated area in Australia, with closer settlements on three sides of it, as will be seen by the locality plan. Orchard land in the Rodney District to the east of it has sold for \$450 an acre, and alfalfa (lucerne) land in the recently settled Rochester District to the west has sold this season for \$222 an acre.

Land seeded to alfalfa in the surrounding closer settlements has rented this season for a period of six months for \$50 to \$90 an acre. In the Rochester District 31 settlers rented portions of their farms, aggregating 747 acres, for \$40.125, which was considerably more than they paid the State for the land.

Another advantage of this estate is the fact that it is practically all virgin soil. Its fertility has never been impaired by cultivation. Most of the land is a red sandy loam, with an even surface, well suited to the distribution of water. There are some areas that are broken by low sandy ridges, which are better adapted to fruit-growing, as orchards and vines can be irrigated



Cutting and Bagging Alfalfa Chaff on a Victorian Irrigated Farm.

by furrows, than to alfalfa, where the surface has to be flooded. About 2,000 acres of the estate is a heavy clay soil, better suited to grain growing without irrigation than to the growing of irrigated products. This will be sold without a water-right as non-irrigable land, either independent of the irrigable areas, or in connexion with small irrigated tracts.

The plan of this estate shows railways on three sides of it. These railways connect the estate with Melbourne and Sydney, and also with the dry interior country north of the Murray River. The State Railways Standing Committee has recommended the construction of another railway to give this estate a still better service. The route recommended runs from Rushworth to the centre of the estate, where a town laid out in accordance with the modern ideas of town planning will be located. The State Government has announced its approval of this railway, and when built no part of the estate will be more than 5 miles from a railway station, while the average distance will be about 3 miles.

Products of the Irrigated Area.

(Alfalfa.)

The main productions of the closer settlement areas are fruits and fodder crops, and the most important fodder crop is alfalfa. If this is seeded early in the Spring, *i.e.*, in August, three cuttings can be secured the first year, and five cuttings each subsequent year. The weight of these cuttings will depend on the care and thoroughness with which the crop is irrigated. If irrigated just before cutting, and again as soon as the crop has been removed,

yields of 1 ton or more to the cutting ought to be obtained. There is a local demand for more alfalfa than has ever been produced, and this is likely to continue, because during dry seasons, or during the dry months in the latter part of the summer, there is always a demand on the great pastoral estates for either alfalfa hay or for the use of alfalfa fields for grazing. The price of alfalfa hay fluctuates widely in different months of the year, there being, as a rule, little demand and lower prices in the winter and spring months, when grass is abundant on the pastoral areas, while higher prices are obtained when the pastures of the dry areas begin to fail. During the past five years the prices at the nearest railway station of pressed alfalfa has varied from \$10 to \$30 a ton, and in three of these years it has reached the higher figure. It is selling, when this is written, at \$30 per ton in the stack. In the Rochester District one grower has sold the crop off 25 acres for \$1,750, the buyer to do the harvesting. In two instances settlers are being paid \$5,000 for pasturing 1,000 sheep for six months. These are exceptional prices, due to a temporary drought; but the average returns from irrigated alfalfa fields are such as to make it the most important and profitable farm crop which can be grown.



An Irrigated Oat Crop.—Rochester District, Victoria.

Dairying and Sheep Fattening.

Where alfalfa is not grown for hay, it is either used for fattening sheep or fed to dairy herds. As yet pig raising, while profitable, is only carried on in connexion with dairying. The usual practice is to sell the cream to butter factories, and feed the skim milk to pigs. A well selected and well cared for dairy herd ought to return a gross income of \$60 to \$75 per cow, and an irrigated farm ought to support two cows on three acres.

Fattening sheep on irrigated farms is a new industry which promises to assume large proportions. Sheep and lambs from the great pastoral areas are bought when the grass fails, and are either turned into the growing alfalfa fields or held in feed lots and fed the green hay, which is cut each day for this purpose. Fattening sheep on dry hay has not as yet been resorted

to, the long growing season rendering this unnecessary. In dairying and sheep feeding on irrigated farms it is proving more profitable to combine certain annual fodder crops with alfalfa. These give a large acreage return, a varied diet, and enables a rotation of crops to be introduced.

On a proper scheme of rotation 10 to 20 sheep per acre can be kept on an irrigated farm seeded to alfalfa and mixed fodder crops, and 30 to 50 sheep per acre fattened in a single season.

Orchards.

There are orchards and vineyards in full bearing in the Rodney District, immediately east of the Stanhope Estate, and both orchards and vineyards in the closer settlement at Shepparton, which are showing that profitable returns can be obtained four years from planting. A 5-acre peach orchard in the Shepparton District, planted three and a-half years ago, yielded last year 800 cases of fruit, from which about \$250 gross and \$150 net per acre was realized. Peach and apricot trees begin bearing three to four years after planting; grapes from two to three years; oranges, pears, and apples from four to six years. Thus far the local demand has absorbed all the fruit except pears and apples, which are exported profitably to Europe, where they arrive during the winter months, and are sold for considerably higher prices than prevail during the summer season. Trial shipments of grapes and plums to Europe and America have been made with very satisfactory results as regards condition of fruit on arrival and the prices obtained for it.

The Price of Land in the Stanhope Estate and the Conditions of Purchase.

The lands of the Stanhope Estate are offered to settlers in tracts varying in size from 2 acres to 100 acres, and at prices varying from \$30 to \$100 an acre. A 3 per cent. cash payment is required, which is deducted from the price, and thereafter payments are based on the remainder. These payments are amortized, and are uniform throughout the entire payment period, which extends over $31\frac{1}{2}$ years. During this period the settler pays 3 per cent. on the debt every six months, or 6 per cent. a year. Of this $4\frac{1}{2}$ per cent. is interest and $1\frac{1}{2}$ per cent. goes into a sinking fund for the payment of the debt. The settler may complete his payments in a shorter period if he desires, and can obtain a title to the land in twelve years. The title has, however, a condition that the owner of the block must continue to reside on it, or in case of sale, can only dispose of it to an actual settler who is eligible under the terms of the "Act." These restrictions are intended to prevent the land being aggregated into large estates, and falling into the hands of non-resident owners.

Assistance to Settlers.

The policy of the State is to provide cheap land for settlers on long time payments, and in addition to give such assistance as will enable settlers with small capital to bring it all under cultivation in the shortest possible time, and with the least expenditure of labour and money. For this purpose there

is located in each district an officer, whose business it is to give practical advice, assistance, and direction to beginners, both in regard to methods of cultivation, purchasing equipment, and the marketing of products. Where desired, the State builds houses for settlers, and gives them twenty years time in which to complete paying for them. The character of these houses, their approximate cost, and the cash deposit required is shown in a pamphlet, which can be obtained in the Australian building at the Exposition, or at the Victorian Immigration Office, 687 Market-street, San Francisco. The State will also grade and seed a portion of each holding to alfalfa on payment of one-fifth the estimated cost for areas under 15 acres, and two-fifths the cost for larger areas, the remainder to be paid in ten years, with interest at 5 per cent. ; or, if the settler desires, there are private contractors who will grade and seed the land ; where the work is done to the satisfaction of the commission, the State will then advance, as a loan, 60 per cent. of the cost. After the settler is established the State will, where necessary, make him advances equal to 60 per cent. of the value of his permanent improvements ; these advances may be either in money or as a credit against payments on the land. The settler of limited means is in this way helped to bring his land into full production, and secure a much larger immediate return than would otherwise be possible.



Cultivating an Orchard.—Three and a half years after Planting.—Shepparton District, Victoria.

Water for Irrigation.

Water for irrigating the Stanhope Estate comes from the Goulburn River, through the channels of the Goulburn scheme, which is the largest State irrigation work in Victoria. It now irrigates about 175,000 acres, and has cost to date \$6,540,000, of which \$3,660,000 was donated by the State, and on which Irrigators do not have to pay interest.

While much of the water used will be taken directly from the river, there are two reservoirs which reinforce the water supply when the river is low. Together these hold 220,000 acre-feet of water, and a third reservoir to hold



Oranges Grown under Irrigation, Victoria.

240,000 acre-feet is being built. The price of water is based on the cost of supplying it. The income from water must provide 4 per cent. interest on the cost of the work, with the expenses of maintenance and operation and a small provision for a sinking fund added. During the present season the price is \$1.20 an acre-foot, but this will probably be increased to \$1.50 in the near future.

The irrigable part of the Stanhope Estate will have a water-right allotment of 1 acre-foot of water for each acre of land, which, with the rainfall (about 20 inches), is more than sufficient for the growing of annual fodder crops and for the irrigation of orchards, but is not sufficient for the irrigation of alfalfa. The channels, however, have been made large enough to meet all demands, and where more water is needed than is allotted, it is sold at the same price as that allotted. About 500 farm and orchard blocks at Stanhope are now open to selection. The location and prices of these allotments are shown on plans, which can be obtained at either the Australian building or at the Victorian office, 687 Market-street, San Francisco.

THE WERRIBEE ESTATE.

The Werribee Estate of 8,000 acres is a part of the fertile river plain which lies on both sides of the Werribee River, from where it enters Port Phillip Bay. The irrigable lands offered by the State to settlers are on the east side of the river between the bay and the Werribee railway station, a distance of about 6 miles. The rainfall of this section is only about 20 inches per year, which is considerably below the average of the adjacent coastal region, and as the greater part of this rain falls in the winter and spring, the full agricultural development of this area can only be secured by irrigation. The water supply comes in part direct from the river, and in part from two reservoirs—one in the channel of Pyke's Creek, a tributary of the Werribee, which holds 15,000 acre-feet of water, and another in the channel of the Werribee River at Melton, about 10 miles above stream from the estate. The Melton reservoir is now being constructed. It will be completed in about a year, and will hold 10,000 acre-feet of water. When this reservoir is completed, it will give an ample and assured water supply to meet all needs of irrigation at all seasons of the year. Six thousand eight hundred acres of this estate have been subdivided, and the remaining 1,200 acres will be subdivided in the near future.

Soil.

The soil is a red sandy loam, underlaid in some parts by a sandy subsoil, and in other parts by a clay subsoil, with a sand stratum below. The elevation of the land above the river and the bay ensures perfect natural drainage, while the even slope of the surface and the fertility of the soil makes it exceptionally well suited to irrigated farming.

Products.

The nearness of this district to a city of 600,000 people gives it great advantages for the growing of alfalfa for the Melbourne market and for fattening sheep, which can be driven to and from the Melbourne saleyards



Harvesting Alfalfa, Werribee Estate.

It is also suited to the growing of fruit and market gardening. About a dozen market gardeners are established on the estate. They haul their products to the market in the evening, sell out, and are back home early the following forenoon. The railway also gives frequent and cheap service for both products and passengers. The State's principal experimental and research farm is located at this estate. New settlers, by watching the operations on this farm, are thereby enabled to obtain many valuable suggestions regarding their own work. On the State research farm $6\frac{1}{2}$ tons of alfalfa have been obtained during the first year, and it is expected that up to 8 tons an acre will be obtained from established fields.

The prices of both land and water in the Werribee Estate are considerably higher than at Stanhope. Land varies in price from \$100 to \$150 an acre. Water at present costs \$2.40 per acre-foot; but this will be subject to increase when the Melton reservoir is completed, and the interest payments on its cost have to be met. Owing to its location, and the excellent results being obtained by beginners, there is a general belief that the prices of land in this area are destined in the near future to be much higher than at present. The terms of purchase and the assistance given settlers are the same as at Stanhope.

Further information regarding other irrigable areas may be obtained at the Victorian Immigration Office, 687 Market-street, San Francisco, California.



Peaches, three and a half years after Planting.—Shepparton Irrigation District, Victoria.



The Goulburn Weir.

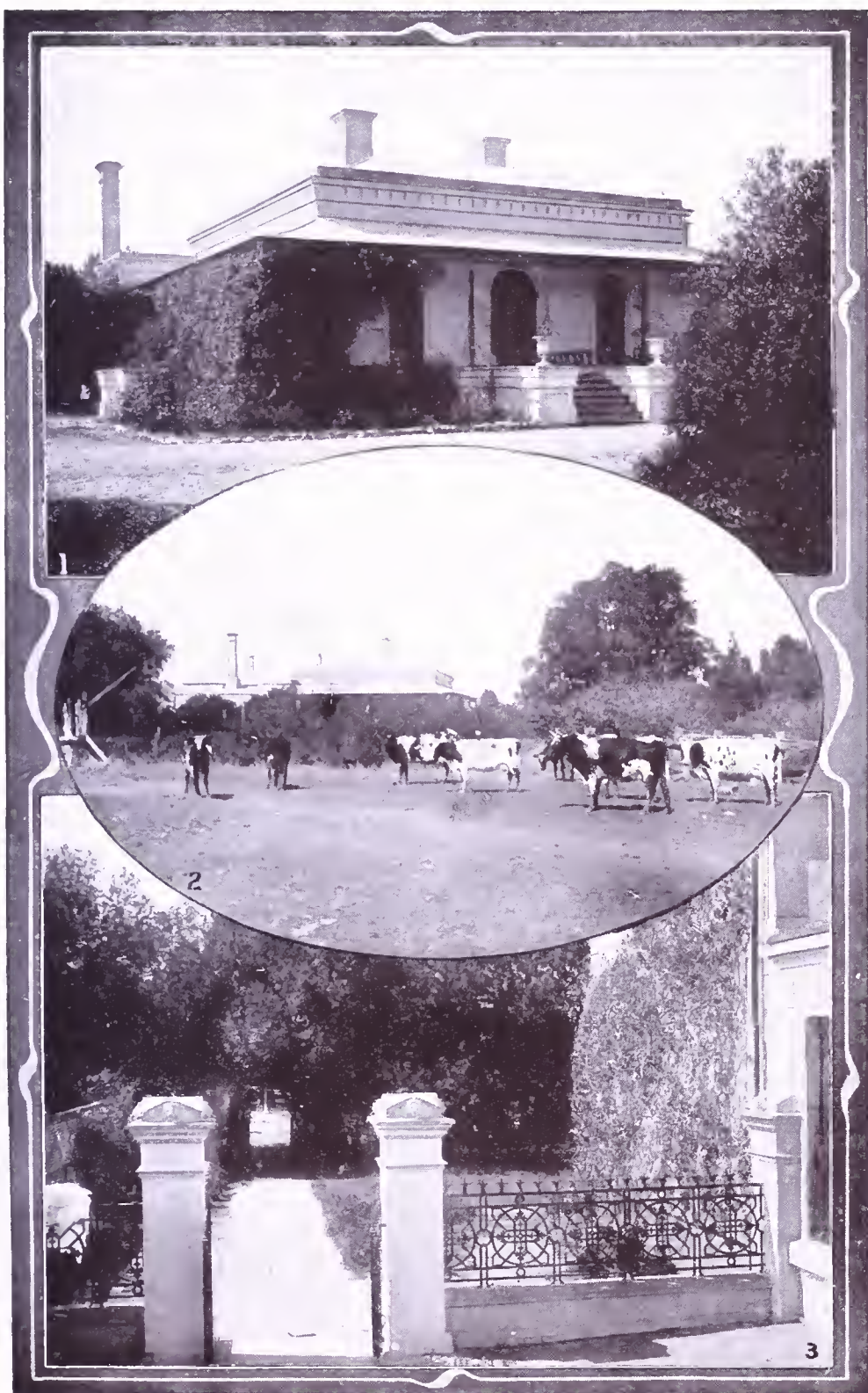


The Main Waranga Irrigation Channel.



Junction of Branch and Main Channels (Waranga System).

“ Stanhope ” Homestead.

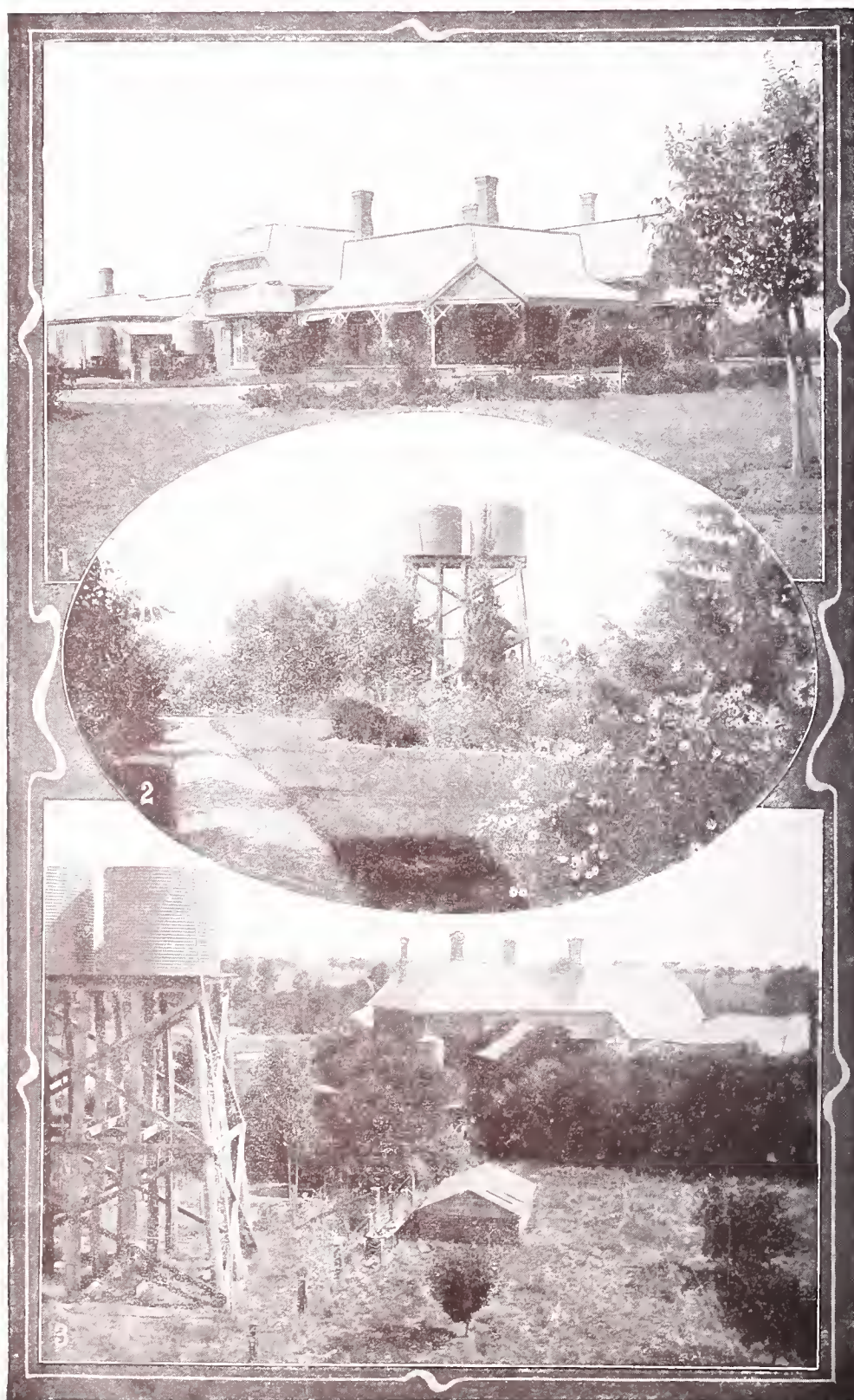


1. The Homestead.

2. The Dairy Herd.

3. The East Terrace.

A Homestead on the "Stanhope" Estate.



1. The House and Lawn.

2. The West Garden.

3. General View of the Home.